



ORIGINAL RESEARCH PAPER

Education

DIFFERENTIAL INFLUENCE OF MENTAL HEALTH ON THE EFFECTIVENESS OF MINDFULNESS MEDITATION IN ALLEVIATING PARENTING STRESS IN MOTHERS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

KEY WORDS: Parenting stress, Autism spectrum disorder, Mindfulness meditation

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ABSTRACT

The study explored the differential influence of mental health on reducing parenting stress in mothers of children with autism spectrum disorder (ASD) by employing the Brief Mindfulness-Based Stress Reduction Programme (BMBSRP). The pre-test post-test control group design was adopted for the study, wherein two convenient groups of mothers of children diagnosed with ASD were designated as control group and experimental group. The participants were pre-tested for their mental health and separated into high-, average-, and low mental health groups. The parenting stress of the participants in both the control and experimental groups were measured before and immediately after the experimentation. The experimental group was intervened with the BMBSRP for 4-weeks at the rate of two 1.5 hours sessions per week. Result of the analysis revealed that the BMBSRP is effective in alleviating the parenting stress of mothers of children with ASD, which is a function of their mental health.

INTRODUCTION

Parenting is inherently challenging, even in relation to normative events experienced by every parent (Glasberg et al., 2006), and potentially more so for parents of children with additional needs. Previous research has consistently reported higher levels of parenting stress among parents of children with Autism Spectrum Disorder (ASD) than parents of typically developing children and children with other disabilities (Hayes & Watson, 2013). Raising a child with autism spectrum disorder is a complex situation of chronic stress for both the parents, especially for the mothers. Alleviating the parenting stress in mothers of a child affected by ASD is necessary in order to optimise the developmental progress of the disabled child and also to improve the overall health and quality of life of the mother, as well as those of other family members (Jellett et al., 2015).

There is growing evidence to indicate that increasing mindfulness, or a person's focused awareness in the here and now, may be a worthwhile therapeutic goal in order to reduce stress. The use of techniques to increase mindfulness has become somewhat mainstream in the clinical literature (Hayes et al., 2012) as a way to increase awareness of emotions and reframe emotions in a more adaptive fashion (Bishop et al., 2004), with a growing research base to support applicability and utility. Mindfulness-Based Stress Reduction (MBSR) is an evidence-based stress-reduction intervention program supported by over two decades of extensive research showing its effectiveness in reducing stress, anxiety, and depression, and promoting overall wellbeing (Chiesa & Serretti, 2010; Fjorback et al., 2011; Grossman et al., 2004). It is known today that personal characteristics of an individual protect them against negative effects of stressful life events (Kliewer & Sandler, 1992). Psychological factors such as locus of control (Hasall et al., 2005; Hagekull et al., 2001), self-efficacy (Hastings & Brown 2002), and mental health (Herring et al., 2006) have been found to be decisive in stress associated with parenting of children with disabilities. No studies, however, has been reported in the literature to know how far these psychological factors influence the effectiveness of a mindfulness based psycho-educational intervention like MBSR in reducing stress in parents of children with developmental disabilities. This investigation, therefore, aims to find out the differential role of mental health in the effectiveness of a Brief Mindfulness-Based Stress Reduction Programme (BMBSRP) in alleviating the parenting stress in mothers of children with autism spectrum disorder.

OBJECTIVES OF THE STUDY

The main objective of the study is to find out the differential

effect of mental health on the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with autism spectrum disorder.

HYPOTHESIS OF THE STUDY

The null hypothesis formulated for the study is stated as follows: "There will be no significant difference among mothers with high-, average-, and low mental health with regard to the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with autism spectrum disorder".

METHODOLOGY

Method

The study adopted a quasi-experimental (non-equivalent pre-test post-test control group) design.

Population

Mothers of children (in the age range 4-14) with ASD, residing within the revenue boundaries of Kerala (India) constituted the research population.

Participants

The participants of the study was two convenient groups of mothers of children with ASD enrolled to two district level Centres for Research and Development of Autistic Children (CRDAC), one at Thrissur (the control group; n = 58) and the other at Kozhikode (the experimental group; n = 63).

Tools Used

a) Stress Inventory for Mothers of Children with Autism Spectrum Disorders:

Parenting stress of the participants were measured by administering the Stress Inventory for Mothers of Children with Autism Spectrum Disorders (SIM-CASD) developed by Bindu and Arjunan (2014). It is a standardised 30 item five-point Likert-type scale covering three domains of parenting stress, viz., child characteristics, parent characteristics, and social/family life stress. The SIM-CASD has a concurrent validity of 0.73 and split-half reliability of 0.83.

b) Mental Health Status Scale for Adults:

Mental health of the mothers of autistic children was measured by the Mental Health Status Scale for Adults (MHSA) (Arjunan & Vinila, 2014). It is a 60 item five-point Likert type scale which covers 10 dimensions of the modern concept of mental health, viz., (i) Optimism, (ii) Adaptability, (iii) Sense of security, (iv) Perception of reality, (v) Emotional maturity, (vi) Social conformity, (vii) Mastery of environment, (viii) Positive attitude towards self, (ix) Positive attitude towards

others, and (x) Freedom from negativism. The MHSA has reported to have a concurrent validity of 0.74 and a split-half reliability of 0.79.

Experimental Intervention

The experimental group was intervened with a mindfulness meditation based stress reduction programme named as 'the Brief Mindfulness Based Stress Reduction Programme (BMBSRP)'. The BMBSRP is modelled on the Mindfulness-Based Stress Reduction (MBSR) program developed at the University of Massachusetts Medical Center by **Kabat-Zinn (1991)**. The MBSR is an 8-week evidence-based programme that offers secular, intensive mindfulness training to support people with pain, anxiety, stress and depression. It employs a blend of mindfulness meditation, body awareness, yoga and exploration of patterns of behaviour, thinking, feeling and action. The BMBSRP consisted of four 1.5 hours sessions, spread over 4-weeks, which incorporated formal techniques utilized in MBSR, such as body scan meditation, sitting meditation, *hatha yoga*, walking meditation, and loving-kindness meditation.

Procedure

The participants in both the control group and experimental group were subjected to pre-test measurement of parenting stress and mental health before the commencement of the experimentation. Strict control condition was maintained for the participants in control group, while the experimental group was exposed to BMBSRP intervention for four weeks at the rate of one session of 1.5 hours duration per week and a homework of 20-25 minutes formal meditation daily for 6 days per week. Post-test measurement of the parenting stress was done in both control group and experimental group immediately after the experimentation. The participants in both the control group and the experimental group were divided in to high-, average-, and low mental health groups based on the MHSA scores by following the $M \pm$ principle, and the change happened in the parenting stress of the groups as a result of the experimental intervention was compared statistically.

ANALYSIS AND INTERPRETATION

Table 1 presents the result of the one way ANOVA performed to compare the parenting stress scores of mothers with high-, average-, and low mental health in the experimental group.

Table 1: Comparison of the Pre-test Scores of Parenting Stress in Mothers with High-, Average- and Low Mental Health in the Experimental Group (Summary of ANOVA)

MHS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3962.856	2	1981.428	29.383	.000
Within Groups	4046.128	60	67.435		
Total	8008.984	62			

The F-value estimated is significant ($F = 29.383; p < .001$), showing that there is significant difference among the mothers in different mental health groups with regard to their pre-test scores of parenting stress. The result of the Scheffe's post hoc test of multiple comparisons performed in the context is given in Table 2.

Table 2: Post hoc tests for comparison of high-, average-, and low mental health groups with regard to their pre-test scores of parenting stress (Experimental Group)

(I) MHS	(J) MHS	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	11.589*	2.695	.000	4.82	18.35
	High	26.933*	3.516	.000	18.11	35.76
AVERAGE	Low	-11.589*	2.695	.000	-18.35	-4.82
	High	15.344*	2.896	.000	8.07	22.61

HIGH	Low	-26.933*	3.516	.000	-35.76	-18.11
	Average	-15.344*	2.896	.000	-22.61	-8.07

* The mean difference is significant at the 0.05 level.

The results of the *post hoc* test show that there exists significant difference between all the group pairs compared. Inspection of mean difference estimated for the different groups show that higher the mental health lower will be their parenting stress. The comparison of the parenting stress in mothers having high-, average-, and low mental health in the control group is given in Table 3.

Table 3: Comparison of the Pre-test Parenting Stress Scores of Mothers with High-, Average-, and Low Mental Health in the Control Group (Summary of ANOVA)

MHS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3644.557	2	1822.279	17.481	.000
Within Groups	5733.322	55	104.242		
Total	9377.879	57			

The F-value obtained is significant beyond 99% confidence interval ($F = 17.481; p < .001$), revealing the presence of a true difference in the parenting stress of mothers in the control group in accordance with the level of their mental health. The result of the *post-hoc* test of multiple comparison made in this regard is given in Table 4.

Table 4: Post Hoc Tests for Comparison of High-, Average-, and Low Mental Health Groups with regard to their Pre-test Score of Maternal Stress (Control Group)

(I) MHS	(J) MHS	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	9.839*	3.650	.033	.66	19.02
	High	25.117*	4.372	.000	14.12	36.12
AVERAGE	Low	-9.839*	3.650	.033	-19.02	-.66
	High	15.278*	3.403	.000	6.72	23.84
HIGH	Low	-25.117*	4.372	.000	-36.12	-14.12
	Average	-15.278*	3.403	.000	-23.84	-6.72

* The mean difference is significant at the 0.05 level.

The mean difference estimated for different paired groups are all significant at 95% confidence interval and above. It shows that there is true differences among mothers having high-, average-, and low mental health, in the control group, in the parenting stress they experience. It is further revealed that in control group also mothers having higher levels of mental health experience lower parenting stress. Table 5 presents the result of the comparison of the pre-test and post-test scores of parenting stress of mothers having high-, average-, and low levels of mental health in the experimental group.

Table 5: Comparison of Pre-test and Post-test Parenting Stress Scores of Mothers in High-, Average-, and Low Mental Health Groups (Experimental Group)

Mental Health	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ ₁	N ₂	M ₂	σ ₂		
High	10	94.90	10.20	10	88.00	9.16	7.10	.001
Average	41	101.54	9.78	41	94.12	9.59	17.88	.001
Low	12	114.83	8.64	12	102.08	11.53	10.51	.001

The result of the paired t-tests, presented in Table 5, shows that there is a significant difference between pre-test and post-test mean scores of parenting stress of mothers in all the three levels of mental health. Inspection of mean scores estimated for the groups reveals that post-test scores of maternal stress are considerably lower than that of the pre-test condition. Table 6 presents the result of the comparison of the pre-test and post-

test scores of parenting stress of mothers having high-, average-, and low levels of mental health in the control group.

Table 6: Comparison of Pre-test and Post-test Parenting Stress Scores of Mothers in High-, Average-, and Low Mental Health Groups (Control Group)

Mental Health	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ ₁	N ₂	M ₂	σ ₂		
High	12	88.58	8.50	12	88.83	7.78	0.31	NS
Average	30	100.97	5.62	30	100.97	9.14	0.00	NS
Low	16	115.44	9.52	16	115.12	9.53	0.96	NS

The t-values obtained on comparing the pre-test and post-test scores of parenting stress for the high-, average-, and low mental health groups in the control group are not significant. It shows that the effect of control conditions on the parenting stress of mothers in different levels of mental health are alike. Table 7 presents the result of the comparison of the control group and experimental group regarding the mean gain scores of parenting stress of mothers in high-, average-, and low levels of mental health.

Table 7: Comparison of Control Group and Experimental Group regarding the Gain Scores of Parenting Stress in Mothers with High-, Average-, and Low Mental Health

Mental Health	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ ₁	N ₂	M ₂	σ ₂		
High	12	0.25	2.77	10	-6.90	3.07	5.74	.001
Average	30	00	3.22	41	-7.41	2.66	10.63	.001
Low	16	-2.38	2.34	12	-12.75	4.20	8.34	.001

All the t-values obtained are significant, showing that the Brief Mindfulness-Based Stress Reduction Programme is effective in alleviating the parenting stress in mothers having different levels of mental health. Table 8 presents the result of the comparison of the mean gain scores of parenting stress experienced mothers having high-, average-, and low levels of mental health in the control group.

Table 8: Comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low mental health in the control group (Summary of ANOVA)

MHS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	31.757	2	15.879	1.732	NS
Within Groups	504.122	55	9.166		
Total	535.879	57			

The F-value estimated is not significant, showing that mothers with high-, average-, and low levels of mental health in the control group do not differ significantly with regard to their mean gain scores of parenting stress. Table 9 presents the result of one way ANOVA performed to compare the mean gain scores of parenting stress experienced mothers having high-, average-, and low levels of mental health in the experimental group.

Table 9: Comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low mental health in the experimental group (Summary of ANOVA)

MHS	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	323.619	2	161.809	18.433	.000
Within Groups	526.699	60	8.778		
Total	850.317	62			

The F-value estimated is significant beyond 99% confidence interval (F = 18.433; p < .001), showing that mothers with high-, average-, and low mental health differ significantly with regard to the decrease of parenting stress happened as result of BMBSRP intervention. The result of the post-hoc test performed subsequently to find out the groups which differ significantly from others in the reduction of maternal stress is given in Table 10.

Table 10: Post hoc tests for comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low mental health in the experimental group

(I) MHS	(J) MHS	(I-J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	-5.018*	.972	.000	-7.46	-2.58
	High	-7.150*	1.269	.000	-10.33	-3.97
AVERAGE	Low	5.018*	.972	.000	2.58	7.46
	High	-2.132	1.045	.134	-4.75	.49
HIGH	Low	7.150*	1.269	.000	3.97	10.33
	Average	2.132	1.045	.134	-.49	4.75

* The mean difference is significant at the 0.05 level.

The mean differences estimated for different paired groups reveal that, while the low mental health group differ significantly from the high and average mental health groups, no significant difference was observed between the high and average mental health groups with regard to the mean gain scores. Inspection of the mean estimates reveals that compared to mothers with high and average mental health, the mindfulness meditation was significantly more effective for mothers with low mental health for alleviating their parenting stress. The null hypothesis formulated in this connection, viz., H₀ (there will be no significant difference among mothers with high-, average-, and low mental health with regard to the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with ASD) is, therefore, rejected.

CONCLUSIONS

The mothers with high-, average-, and low mental health in both the experimental group and control group differed significantly with respect to the pre-test score of parenting stress. The observed difference was found to exist significantly between all the paired combinations of high-, average-, and low mental health mothers in both the experimental and the control group. Mothers with lower mental health was found to experience greater stress while nurturing a child with autism. While significant difference between pre-test and post-test scores of parenting stress was observed in mothers at high-, average-, and low levels of mental health in the experimental group, no significant difference was found between pre-test and post-test scores of parenting stress of mothers in any level of mental health in the control group. The experimental group and control group were found to differ significantly with respect to the mean gain scores of parenting stress at all levels of mental health. The BMBSRP intervention is effective in alleviating parenting stress of mothers in high-, average-, and low levels of mental health. Whereas no significant difference exist among mothers having high-, average-, and low mental health regarding the mean gain scores of parenting stress in the control group, mothers in different levels of mental health in the experimental group showed significant difference in the mean gain scores of parenting stress. It reveals that the effectiveness of BMBSRP intervention in alleviating parenting stress in mothers of children with autism varies significantly according to the level of their mental health. The result of the post-hoc test brought out that the Brief Mindfulness-Based Stress Reduction Programme is more effective in reducing the parenting stress of mothers with lower levels of mental health than that in mothers with higher levels of mental health.

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